

**MCV4U Quiz #4 Exponential and Logarithmic Functions**

Name .....

1. Differentiate.

a)  $f(x) = \log_{10}(3x + 1)^4$

b)  $f(x) = \sqrt{x + e^{1-x^2}}$

c)  $f(x) = (x - \ln x)(2^{x^2})$

2. Find the intervals of increase and decrease for  $f(x) = x^2 e^{-x}$ .

3. Find the intervals of concavity for  $f(x) = x \ln(x^2)$ .